

sequence which had the following nucleotide sequence

hybridization probe

5'-CCATTGAGGTGTTCTGGCCCTGTATGTACACATTATACACAGGTCGTGTG-3' (SEQ ID NO:368)

In order to screen several libraries for a source of a full-length clone, DNA from the libraries was screened by PCR amplification with one of the PCR primer pairs identified above. A positive library was then used to isolate clones encoding the PRO541 gene using the probe oligonucleotide and one of the PCR primers. RNA for construction of the cDNA libraries was isolated from human fetal kidney tissue (LIB227).

DNA sequencing of the clones isolated as described above gave the full-length DNA sequence for PRO541 [herein designated as UNQ342 (DNA45417-1432)] (SEQ ID NO:362) and the derived protein sequence for PRO541.

The entire nucleotide sequence of UNQ342 (DNA45417-1432) is shown in Figure 146 (SEQ ID NO:362). Clone UNQ342 (DNA45417-1432) contains a single open reading frame with an apparent translational initiation site at nucleotide positions 469-471 and ending at the stop codon at nucleotide positions 1969-1971 (Figure 146). The predicted polypeptide precursor is 500 amino acids long (Figure 147). The full-length PRO541 protein shown in Figure 147 has an estimated molecular weight of about 56,888 daltons and a pI of about 8.53. Analysis of the full-length PRO541 sequence shown in Figure 147 (SEQ ID NO:363) evidences the presence of the following: a signal peptide from about amino acid 1 to about amino acid 20, amino acid sequence blocks having homology to extracellular proteins SCP/Tpx-1/Ag5/PR-1/Sc7 from about amino acid 165 to about amino acid 186, from about amino acid 196 to about amino acid 218, from about amino acid 134 to about amino acid 146, from about amino acid 96 to about amino acid 108 and from about amino acid 58 to about amino acid 77 and a potential N-glycosylation site from about amino acid 28 to about amino acid 31. Clone UNQ342 (DNA45417-1432) has been deposited with ATCC on May 27, 1998 and is assigned ATCC deposit no. 209910.

Analysis of the amino acid sequence of the full-length PRO541 polypeptide suggests that it possesses significant sequence similarity to a trypsin inhibitor protein, thereby indicating that PRO541 may be a novel trypsin inhibitor. More specifically, an analysis of the Dayhoff database (version 35.45 SwissProt 35) evidenced significant homology between the PRO541 amino acid sequence and the following Dayhoff sequences, D45027_1, AB009609_1, JC5308, CRS3_HORSE, TPX1_HUMAN, HELO_HELHO, GEN14351, A28112_1, CET05A10_4 and P_W11485.

EXAMPLE 57: Isolation of cDNA Clones Encoding Human PRO273

A consensus sequence was obtained relative to a variety of EST sequences as described in Example 1 above, wherein the consensus sequence obtained is herein designated DNA36465. Based on the DNA36465 consensus sequence, oligonucleotides were synthesized: 1) to identify by PCR a cDNA library that contained the sequence of interest, and 2) for use as probes to isolate a clone of the full-length coding sequence for PRO273.

A pair of PCR primers (forward and reverse) were synthesized:

forward PCR primer 5'-CAGCGCCCTCCCCATGTCCTG-3' (SEQ ID NO:371)

reverse PCR primer 5'-TCCCAACTGGTTGGAGTTCCTCC-3' (SEQ ID NO:372)

Additionally, a synthetic oligonucleotide hybridization probe was constructed from the consensus DNA36465

sequence which had the following nucleotide sequence

hybridization probe

5'-CTCCGGTCAGCATGAGGCTCCTGGCGGCCGCTGCTCTGCTGCTG-3' (SEQ ID NO:373)

In order to screen several libraries for a source of a full-length clone, DNA from the libraries was screened by PCR amplification with the PCR primer pair identified above. A positive library was then used to isolate clones encoding the PRO273 gene using the probe oligonucleotide and one of the PCR primers. RNA for construction of the cDNA libraries was isolated from human fetal kidney tissue.

DNA sequencing of the clones isolated as described above gave the full-length DNA sequence for PRO273 [herein designated as UNQ240 (DNA39523-1192)] (SEQ ID NO:369) and the derived protein sequence for PRO273.

The entire nucleotide sequence of UNQ240 (DNA39523-1192) is shown in Figure 148 (SEQ ID NO:369). Clone UNQ240 (DNA39523-1192) contains a single open reading frame with an apparent translational initiation site at nucleotide positions 167-169 and ending at the stop codon at nucleotide positions 500-502 (Figure 148). The predicted polypeptide precursor is 111 amino acids long (Figure 149). Clone UNQ240 (DNA39523-1192) has been deposited with the ATCC. It is understood that the deposited clone contains the actual sequence and that the sequences provided herein are merely representative based on current sequencing techniques. Moreover, given the sequences provided herein and knowledge of the universal genetic code, the corresponding nucleotides for any given amino acid can be routinely identified and vice versa.

Analysis of the amino acid sequence of the full-length PRO273 polypeptide suggests that portions of it possess sequence identity with human macrophage inflammatory protein-2, cytokine-induced neutrophil chemoattractant 2, and neutrophil chemotactic factor 2-beta, thereby indicating that PRO273 is a novel chemokine.

As discussed further below, the cDNA was subcloned into a baculovirus vector and expressed in insect cells as a C-terminally tagged IgG fusion protein. N-terminal sequencing of the resultant protein identified the signal sequence cleavage site, yielding a mature polypeptide of 77 amino acids. The mature sequence, showing 31-40% identity to other human CXC chemokines, includes the four canonical cysteine residues but lacks the ELR motif. Northern analysis demonstrates expression at least in the small intestine, colon, spleen, lymph node and kidney. By in situ hybridization, also described in detail below, mRNA is localized to the lamina propria of intestinal villi and to renal tubules.

EXAMPLE 58: Isolation of cDNA Clones Encoding Human PRO701

A consensus sequence was obtained relative to a variety of EST sequences as described in Example 1 above, wherein the consensus sequence obtained is herein designated DNA39848. Based on the DNA39848 consensus sequence, oligonucleotides were synthesized: 1) to identify by PCR a cDNA library that contained the sequence of interest, and 2) for use as probes to isolate a clone of the full-length coding sequence for PRO701.

A pair of PCR primers (forward and reverse) were synthesized:

forward PCR primer 5'-GGCAAGCTACGGAAACGTCATCGTG-3' (SEQ ID NO:376)

reverse PCR primer 5'-AACCCCGAGCCAAAAGATGGTCAC-3' (SEQ ID NO:377)

Additionally, a synthetic oligonucleotide hybridization probe was constructed from the consensus DNA39848 sequence which had the following nucleotide sequence:

hybridization probe

5'-GTACCGGTGACCAGGCAGCAAAAGGCAACTATGGGCTCCTGGATCAG-3' (SEQ ID NO:378).

In order to screen several libraries for a source of a full-length clone, DNA from the libraries was screened by PCR amplification with the PCR primer pair identified above. A positive library was then used to isolate clones encoding the PRO701 gene using the probe oligonucleotide and one of the PCR primers. RNA for construction of the cDNA libraries was isolated from human fetal kidney tissue (LIB227).

DNA sequencing of the clones isolated as described above gave the full-length DNA sequence for PRO701 [herein designated as UNQ365 (DNA44205-1285)] (SEQ ID NO:374) and the derived protein sequence for PRO701.

The entire nucleotide sequence of UNQ365 (DNA44205-1285) is shown in Figure 150 (SEQ ID NO:374). Clone UNQ365 (DNA44205-1285) contains a single open reading frame with an apparent translational initiation site at nucleotide positions 50-52 and ending at the stop codon at nucleotide positions 2498-3000 (Figure 150). The predicted polypeptide precursor is 816 amino acids long (Figure 151). The full-length PRO701 protein shown in Figure 151 has an estimated molecular weight of about 91,794 daltons, a pI of about 5.88 and NX(S/T) being 4. Clone UNQ365 (DNA44205-1285) has been deposited with the ATCC on March 31, 1998. It is understood that the clone was the correct and actual sequence, wherein the sequences provided herein are representative based on sequencing techniques.

Still regarding the amino acid sequence shown in Figure 151, there is a potential signal peptide cleavage site at about amino acid 25. There are potential N-glycosylation sites at about amino acid positions 83, 511, 716 and 803. The carboxylesterases type-B signature 2 sequence is at about residues 125 to 135. Regions homologous with carboxylesterase type-B are also at about residues 54-74, 197-212 and 221-261. A potential transmembrane region corresponds approximately to amino acids 671 through about 700. The corresponding nucleic acids can be routinely determined from the sequences provided herein.

Analysis of the amino acid sequence of the full-length PRO701 polypeptide suggests that it possess significant homology to the neuroligins from *rattus norvegicus* indicating that PRO701 may be a novel human neuroligin.

EXAMPLE 59: Isolation of cDNA Clones Encoding Human PRO704

A consensus sequence was obtained relative to a variety of EST sequences as described in Example 1 above, wherein the consensus sequence obtained is herein designated DNA43033. Based on the DNA43033 consensus sequence, oligonucleotides were synthesized: 1) to identify by PCR a cDNA library that contained the sequence of interest, and 2) for use as probes to isolate a clone of the full-length coding sequence for PRO704.

A pair of PCR primers (forward and reverse) were synthesized:

forward PCR primer 5'-CCTTGGGTCGTGGCAGCAGTGG-3' (SEQ ID NO:381);

reverse PCR primer 5'-CACTCTCCAGGCTGCATGCTCAGG-3' (SEQ ID NO:382).